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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/018,324      | 03/29/2002  | Richard Langley      | 10681-006           | 4617             |

20583 7590 10/31/2003  
PENNIE AND EDMONDS  
1155 AVENUE OF THE AMERICAS  
NEW YORK, NY 100362711

EXAMINER

CLINGER, JAMES C

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2821

DATE MAILED: 10/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/018,324

Applicant(s)

Langley

Examiner

Jim Clinger

Art Unit

2821



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Oct 10, 2003
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 29-57 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 32, 33, 37-39, 41-43, 46-49, and 57 is/are allowed.
- 6) ☒ Claim(s) 29, 30, 36, 40, 44, 45, and 50-56 is/are rejected.
- 7) ☒ Claim(s) 31, 34, and 35 is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Jun 12, 2000 is/are a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 29-30, 36, 40, 44, 50 and 55-56 are rejected under 35 U.S.C. 102(b) as being anticipated by the article "FDTD Analysis of printed Square Spiral Antennas for Wireless Communications" by Chen, Elshebeni, Smith and Rahmat-Samii.

Claims 29 and 55, figure 1 discloses an open ended RF antenna with a spiral portion made from linear sections and a feed in the center which is resonant in a plurality of frequency bands.

Claims 30, 36 and 56, the antenna disclosed in figure 1 is linear polarized with four major sides.

Claim 40, co-extensive sides are parallel to each other in figure 1.

Claim 44, one end of the conductor is an outer end of the spiral form of figure 1.

Claim 50, the antenna disclosed in figure 1 is above a ground plane.

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***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 45 and 51-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Article by Chen, Elshebeni, Smith and Rahmat-Samii in view of Kane et al.(6,057,803).

The article by Chen et al. does not disclose a stub, dipole configuration or window mounting.

Claim 45, figure 30b of Kane discloses a pair of three adjacent wires the outermost of which could be considered a stub.

Claim 51, figure 30b of Kane discloses a dipole with two spirals.

Claims 52-54, the antenna disclosed in Kane can be used with a vehicle as recited.

These elements which are disclosed in Kane produce improved antenna performance(col. 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a stub or dipole configuration as disclosed in Kane with the antenna disclosed in Chen for improved performance as disclosed in Kane.

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***Allowable Subject Matter***

5. Claims 32-33, 37-39, 41-43, 46-49 and 57 are allowed.
6. Claims 31, 34-35, objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The following is a statement of reasons for the indication of allowable subject matter. The following limitations are primarily responsible for distinguishing these claims over the prior art.

Regarding claims 31-32, 34-35, 37-39, 41-43 and 46-49, the limitation concerning at least three opposing sides being nonparallel as recited in claim 31; regarding claim 33, the limitation concerning the spiral having a triangular shape and having a plurality of resonances; and regarding claim 57, the limitations concerning the antenna having a single conductor.

Claims 32-33 recite the limitation "envelope of the generally spiraling form". Examiner is using the mathematical definition of the word envelope which is a surface tangent to all curves of a family of curves. In these recited claims the family of curves is the curves from which the spiral is constructed.

***Response to Arguments***

- 8 Applicant's arguments filed October 10, 2003 have been fully considered but they are not persuasive with respect to claims 29-30, 36, 40, 44-45 and 50-56.

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While Chen discloses a two conductor spiral antenna as opposed to the recited single conductor of this application, the Chen based rejection is still proper because the above rejected claims recite “antenna comprising a single conductor” and use of the word “comprising” does not preclude the presence of a second conductor in Chen.

In the above 35 USC 103 rejection, prior art reference Kane is not used to disclose multiple frequency bands. Chen is the primary reference which discloses multiple frequency bands and Kane is only cited to disclose minor modifications and uses of the antenna disclosed in Chen. These minor modifications, uses and motivations for modification are referenced above.

### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

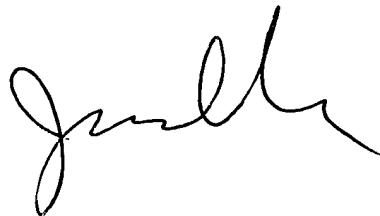
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*Correspondence*

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Jim Clinger whose phone number is (703) 305-0619.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center whose telephone number is (703) 308-0956.

Papers related to Technology Center 2800 applications only may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center Fax Center number is (703) 308-7722 or (703) 308-7724.

A handwritten signature in black ink, appearing to be "J. Clinger", is located in the lower right portion of the page.